

COURSE TITLE : **ENGINEERING SCIENCE LAB (For Semester I & II)**
[Engineering Physics & Engineering Chemistry Lab]
COURSE CODE : **2007**
COURSE CATEGORY : **F**
PERIODS PER WEEK : **3**
PERIODS /SEMESTER (I & II): **90**
CREDITS : **3**

ENGINEERING PHYSICS LAB

TIME SCHEDULE

SL.No	Name of module	Course objective	Total period in 1 and 2 semester		
			Instructional	Test	Total
1	Measurement and calculation of different physical quantities	1:1 1:2 1:3	Practical: 42	3	45
Total periods 1 and 2 semester 45					

On completion of the course the student will be able to:

1. To measure volume of a cylinder using vernier calipers.
2. To measure volume of a wire using screw gauge.
3. To determine focal length of a convex lens by displacement method.
4. To determine the velocity of sound in air at room temperature using resonance column.
5. To determine spring constant using Hooke's law..
6. To determine acceleration due to gravity using simple pendulum.
7. To verify law of resistances.
8. To determine specific resistance of material using Meter Bridge.
9. To determine Internal Resistance of a Primary Cell using Potentiometer.
10. To plot characteristics of photoelectric cell (photoelectric current vs intensity of light and voltage applied)
11. To determine the mass of the given body using moment bar.
12. To determine the mass of a body by parallelogram method and by Lami's theorem.
13. To verify Ohm's law and to determine the resistance of the given wire.

14. To determine the coefficient of viscosity of a highly viscous liquid.
15. To determine the relative density using U- tube apparatus.

LIST OF PRACTICAL EXPERIMENTS – PHYSICS

1. Vernier calipers
2. Screw gauge
3. Convex lens
4. Resonance column
5. Hooke's law
6. Simple pendulum
7. Law of resistances
8. Meter bridge
9. Potentiometer
10. Photoelectric cell
11. Moment bar
12. Concurrent forces(mass of the body)
13. Ohm's law
14. Stoke's method for viscosity
15. U tube

ENGINEERING CHEMISTRY LAB

SL.No	Name of module	Course objective	Total period in 1 and 2 semester		
			Instructional	Test	Total
1	Quantitative analysis(Volumetric analysis)	1:1 1:2 1:3	Theory: Practical: 39	- 6	45
Total periods 1 and 2 semester 45					

TIME SCHEDULE

On completion of the course the student will be able to:

Practical Volumetric Analysis

Single Titration

1. Standardisation of HCL
2. Standardisation of NaOH Double Titrations
3. Estimation of NaOH
4. Estimation of KOH
5. Estimation of Na₂ CO₃
6. Estimation of K₂ CO₃
7. Estimation of HCl
8. Estimation of HNO₃
9. Estimation of H₂ SO₄
10. Estimation of Oxalic acid
11. Standardisation of KMnO₄
12. Estimation of Oxalic acid
13. Estimation of Fe²⁺ ion
14. Estimation of Mohr's Salt
15. Determination of PH of Solution
16. Estimation of Zinc using EDTA
17. Estimation of Magnesium Using EDTA

Reference:

Prof. A. O. THOMAS – PRACTICAL CHEMISTRY – Eight Edition 2000